

## ABSTRACT OF THE DISCLOSURE

An image processing device for detecting an object whose position and orientation are unknown and for recognizing three dimensional position and/or orientation of the object. A model pattern used for a pattern matching is stored and subject to N geometrical transformations. After initial setting of an index  $i$  that specifies the  $i$ -th geometrical transformation, the  $i$ -th transformed model pattern is prepared, and, using this pattern, a pattern matching is performed. A local maximum point having a similarity equal to or higher than a preset value is searched for. The image coordinate of such a point, if any, is extracted and stored together with information on a three dimensional relative orientation used for the preparation of the transformed model pattern concerned. Based on the information on the three dimensional relative orientation corresponding to the pattern having the best similarity, the three dimensional position and/or orientation is recognized.